

April 7th.

Vice President BRIDGES in the Chair.

A communication was presented for publication in the Proceedings, entitled :

Description of six new species of fresh water and land shells, by Isaac Lea. Referred to a Committee.

On leave granted, Dr. LeConte moved that a special vote of thanks be tendered to Dr. Benjamin Vreeland, U. S. N., for his valuable donation of Esquimaux Skulls received this evening. Which motion was unanimously adopted.

April 14th.

Vice President BRIDGES in the Chair.

Mr. Lea called the attention of the Academy to the specimen of *Unio Spinosus* presented by him this evening. The inner face of the valve has an arch leading toward the spine, which is probably hollow ; thus confirming the view of the mode of formation of the spine previously stated by him.

April 21st.

Vice President BRIDGES in the Chair.

A Communication was received from W. J. Taylor, entitled " Examination of a Nickel Meteorite from Oktibbeha county, Miss.," which was referred to a Committee.

April 28th.

Vice President BRIDGES in the Chair.

The Committees on Mr. Lea's paper, entitled " Description of six new species of fresh water and land Shells," and on Mr. Taylor's " Examination of a Nickel Meteorite, &c.," reported in favor of publication.

Description of Six new species of Fresh Water and Land Shells of Texas and Tamaulipas, from the Collection of the Smithsonian Institution.

BY ISAAC LEA.

UNIO BERLANDIERII. Testâ lævi, subellipticâ, inflatâ, posticè subrotundatâ inæquilaterali ; valvulis crassis, anticè crassioribus ; natibus grandibus, elevatis, tumidis, ad apices minutè undulatâ ; epidermide micans, tenebroso-fuscâ, obsoletè radiatâ ; dentibus cardinalibus magnis, erectis, subcompressis, valdè crenulatis et in utroque valvulo duplicibus ; lateralibus longis, crassis, subcurvis lamellatisque ; margaritâ vel purpurascente vel salmonis colore tinctâ et iridescente.

Hab. Matamoras, Tamaulipas, Mexico. Luis Berlandier, M. D.*

* The collection made by Dr. Berlandier was purchased by Lieut. D. N. Couch, U. S. A., and liberally presented to the Smithsonian Institution.

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UNIO POPEII. Testâ lævi, transversâ, compresso-cylindraceâ, ad basim subemarginatâ, valdè inæquilaterali, ad latere planulatâ, posticè truncatâ; valvulis subtenuibus, anticè crassioribus; natibus parvis, prominulis, ad apices granulatis; epidermide vel tenebroso-olivâ vel fuscâ, obsoletè radiatâ; dentibus cardinalibus compressis, erectis, acuminatis crenulatisque; lateralibus prælongis, lamellatis subrectisque; margaritâ vel albâ vel salmonis tinctâ et iridescente.

Hab. Devil's River and Rio Salado, Texas. Capt. Pope, U. S. A.

UNIO BAIRDIANUS. Testâ lævi, ellipticâ, paulisper inflatâ, postice compressâ, valdè inæquilaterali; valvulis subtenuibus, posticè crassioribus; natibus prominulis, ad apices concentricè undulatis; epidermide tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus parvis, erectis, acuminatis crenulatisque; lateralibus longis, lamellatis subcurvisque; margaritâ albâ et valdè iridescente.

Hab. Devil's River, Texas. Capt. Pope, U. S. A.

ANODONTA HENRVIANA. Testâ lævi, oblongâ, inflatâ, ad basim et anticè compressâ, subæquilaterali, posticè truncatâ; valvulis pertenuibus; natibus depressis, planulatis, ad apices minutè et irregulariter undulatâ; epidermide nitidâ, vel luteâ vel luteo-viridi, obsoletè radiatâ, et vittatâ; margaritâ cæruleo-albâ et valde iridescente.

Hab. Matamoras, Tamaulipas, Mexico. L. Berlandier, M. D.

HELIX (POLYGYRA) COUCHIANA. Testâ supernè paulisper elevatâ, subplanulatâ, infernè subinflatâ; nitidâ, albidâ, longitudinaliter et subtiliter striatâ, minutè perforatâ; anfractibus quinis; aperturâ rotundatâ, quinquedentatâ; labro subacuto.

Hab. Texas. L. Berlandier, M. D.

HELIX (POLYGYRA) TAMAULIPASENSIS. Testâ supernè paulisper elevatâ, subplanulatâ, infernè subinflatâ, nitidâ, albidâ, longitudinaliter et subtiliter striatâ, minutè perforatâ; anfractibus quinis; aperturâ lunatâ, tridentatâ; labro spissato, reflexo.

Hab. Texas. L. Berlandier, M. D.

Examination of a Nickel Meteorite, from Oktibbeha County, Mississippi.

BY WM. J. TAYLOR.

This highly interesting and unique meteorite was found in an Indian mound in which excavations were being made in a search for Indian antiquities, in Oktibbeha County, Mississippi. It then weighed five and a quarter ounces; in shape it resembled a hen's egg. When found, there was a fissure which divided it almost equally into two parts. The person who discovered it seeing this, placed it upon an anvil, and with one blow of a sledge-hammer, divided the meteorite. One half was forged, with the intention of manufacturing it into a cutting instrument of some description; the other remained in its original state; excepting that its exterior was filed smooth and bright.

To Dr. William Spillman, of Columbus, Mississippi, I am indebted for the material for this investigation; he obtained the meteorite from the man who first found it. The unforged half he brought with him on a recent visit to this city, and a portion of which he has presented to the Academy, on the condition that it should be carefully cut, so that the surface which formed one side of the existing fissure above mentioned should be preserved and sent to him. It was proposed to have it cut by a lapidary, but he attempted it without success, using diamond dust on the wheel. On making the first incision, about one-eighth to one-sixteenth of an inch in depth, he found it impossible to proceed, and refused to make farther attempts to cut the meteorite. Mr. John Phillips, a fellow member of the Academy, and an amateur machinist, on hearing of our difficulties, kindly offered to saw the specimen, and succeeded admirably, though it was with very great difficulty. He spoke of its peculiar toughness, (the hard-

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ness not being excessive;) it resisted the saw very much, which rendered the cutting exceedingly tedious, heating the saw to such a degree as to oblige a discontinuance of the operation every four or five minutes, but it was remarkable that it did not dull the blade in the least.

The toughness of the iron was clearly shown when, for the purpose of analysis, it was attempted to cut off portions of it with a chisel; the excessive toughness of the iron rendered this very difficult, without the aid of the saw. The resistance of this meteorite to the action of acids was most remarkable. Strong nitric acid did not act upon it in the cold. Moderately dilute sulphuric acid did not act upon it. Strong and boiling hydrochloric acid acted upon it very gradually.

The above named acids failing to show the slightest trace of the Widmannstättian figures, a mixture of nitric acid and hydrochloric was used, boiling; but even after this operation no trace of them could be distinguished. The action of the aqua regia was gradual and peculiar, producing on the polished surface of the meteorite very small holes, varying in size from a pin's point to those as large as a pin's head. From the appearance of the surface of the meteorite, which formed a side of the fissure before described, I had hoped to obtain by etching beautiful Widmannstättian figures, as there is on this portion indistinct traces of that which would at first glance be called a crystalline structure.

The color of the metal is a silvery grey with a pinkish tinge. Its hardness is not excessive, yielding readily to the file. The tensibility, as before mentioned, was very great. The passivity was proved by testing it with a neutral solution of the sulphate of copper.

The specific gravity at 25° Cels., was found by Dr. F. A. Genth to be 6.854, which is too low, but owing to the numerous fissures through the meteorite filled with limonite, it was impossible to obtain the exact specific gravity of the metal. I used particular care to obtain a portion free from the flaws, but without effect. I take this opportunity to express my thanks to Dr. Genth for allowing me the use of his laboratory in making the examination. The following is the result of my analysis:

1.9421 grammes were dissolved in aqua regia.

1.4731 grams.	NiO	gave of Nickel	59.69 per cent.
1.0452 "	Fe ₂ O ₃	" Iron	37.69 "
0.0221 "	CuO	" Copper	0.90 "
0.0072 "	Al ₂ O ₃	" Aluminium	0.20 "
0.0105 "	Co ₂ O ₃	" Cobalt	0.40 "
0.0048 "	SiO ₂	" Silicium	0.12 "
0.0069 "	2MgO, PO ₅	" Phosphorus	0.10 "
0.0059 "	CaO, CO ₂	" Calcium	0.09 "

99.19

The slight loss of eight-tenths of one per cent. I think is owing to some small portions of limonite existing in the minute fissures already mentioned.

The 0.10 per cent. of phosphorus correspond to 0.64 per cent. of schreibersite, (P. Ni₂ Fe₄.)

It was first attempted to dissolve in hydrochloric acid, but the action of the acid, even when boiling, was so very gradual that nitric acid was added.

I endeavored to separate the nickel and cobalt by Liebig's new method, viz., by precipitating the nickel as a sesqui-oxide, by passing chlorine through an alkaline solution of the two metals in hydrocyanic acid and potash, but it was found not to answer; the separation was made by his former method by oxide of mercury.

The composition of this remarkable meteorite is in itself sufficiently interesting for mineralogists, without any attempts to account for its origin, either terrestrial or celestial. We must remain in doubt as to the exact locality where it was originally found, as it may have been carried by the Indians from a distance to be entombed in this mound, and it may have been considered by them 1857.]

to have a special value, and possibly to possess peculiar virtues, from its being discovered in such a place.

May 5th.

Vice President BRIDGES in the Chair.

Communications were received from Col. J. J. Abert, dated Washington, April 28, 1857, referring to a species of mocking-bird, supposed by him to be new; and from F. B. Meek and F. V. Hayden, M. D., entitled "Explorations under the War Department: Descriptions of new Cretaceous and Tertiary Fossils, collected by Dr. F. V. Hayden in Nebraska, under the direction of Lieut. G. K. Warren, U. S. Top. Engineers, with some remarks on the geology of the Upper Missouri country;" which were referred to Committees, as usual.

Mr. Lea stated that he proposed to change the name of *Unio umbrus* and *Unio Wheatleyi*, to *U. umbrans* and *U. Catawbensis*, having inadvertently repeated these names in his papers of Feb. 17th and March 10th, 1857.

Mr. W. Parker Foulke requested permission to submit to the attention of the Academy some observations of the late Mr. Hugh Miller, printed in his recently published work, entitled "The Testimony of the Rocks."

It may be remembered, said Mr. F., that about three years ago I noticed at one of the stated meetings of the Academy, what appeared to me an interesting example of the fallacious use of a generalization—the inference from a term used in one sense, of what could follow from it only when used in another sense. From the fact that the carboniferous rocks lie within the series which geologists, for special reasons, group into one system which they call the "palæozoic," Mr. Miller had thought himself authorized so far to treat this system as a unity, as to consider it properly characterized as a whole, for the object of his argument, by the carboniferous member; and thence to infer that the palæozoic periods together constituted the Mosaic day during which the creation of vegetables took place. No influence had been allowed to the fact that distinctive types of *animal* organization had been the chief motives for the discrimination between the "palæozoic" and "secondary" rocks as two systems; but the distinction being thus adopted by others, the author had assigned one of the systems entire to the vegetable creation, and the other to that of reptiles.

You will remember, Mr. President that, before the time to which I refer, it was a subject of private remark amongst the members of the Academy, that a large portion of the zeal and talent employed in drawing conclusions from the generalizations of discoveries in natural science, was applied to premature inferences, or in disproportionate subordination to incomplete metaphysical inquiries. This evil was not confined to men of one pursuit, or of one school: but it affected every department of "natural science," and of the abstract sciences most nearly connected with it. In geology, as well as in ethnology, philology, and general natural history, we had frequent occasion to notice the conflict of unnecessary speculations, and of irrelevant or unseasonable inferences; and the temporary withdrawal of much mental activity from the legitimate paths of scientific inquiry. The interval is short since the investigations of our day were fairly opened; and already the necessary subdivisions of labor are so numerous as to demand the most sedulous devotion to each. Yet we saw laborer after laborer diverging from his road to engage upon one or another side of metaphysical controversies, which could not be finally determined except by methods

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